IN THE CLAIMS:

The following is a complete listing of the claims in this application, reflects all changes currently being made to the claims, and replaces all earlier versions and all earlier listings of the claims:

1. (Currently Amended) A printing apparatus scanning a printing head over a printing medium a plurality of times, to perform printing upon the print medium during each respective scan and to feed the printing medium a predetermined amount in a direction different from a scanning direction of a carriage, said printhead being mounted on said carriage, said printing apparatus comprising:

means for getting information relating to a printing medium feeding period required for feeding the printing medium for the predetermined amount after completion of printing in a preceding line in a preceding scan;

means for setting a carriage scanning period required to start printing of the next line after completion of printing in said the preceding line so as to become ~~substantially~~ equal to said printing medium feeding period depending upon a printing completion position of the preceding line and the printing start position of the next line; and

means for driving said carriage to scan depending upon a period set by said carriage scanning period setting means.

2. (Previously Presented) A printing apparatus as claimed in Claim1,

wherein said carriage scanning period includes at least a first carriage scanning period required for the carriage to reach a predetermined position after completion of printing of the preceding line and a second carriage scanning period required

for the carriage to reach the predetermined period at the printing start position of the next line,

said carriage scanning period setting means takes a difference between a said printing medium feeding period and a sum of said first carriage scanning period and said second carriage scanning period, as a waiting period when a sum of said first carriage scanning period and said second carriage scanning period is less than said printing medium feeding period, and

said carriage driving means maintains stopping the carriage for said waiting period after deceleration and stopping of the carriage according to said first carriage scanning period after completion of printing of the preceding line.

3. (Previously Presented) A printing apparatus as claimed in Claim 1,

wherein said carriage scanning period includes at least a first carriage scanning period required for the carriage to reach a predetermined position after completion of printing of the preceding line and a second carriage scanning period required for the carriage to reach the predetermined period at the printing start position of the next line,

said carriage scanning period setting means sets a scanning speed of said carriage so that a sum of said first carriage scanning period and said second carriage scanning period becomes equal to said printing medium feeding period, and

said carriage driving means drives a carriage scanning depending upon the scanning speed of the carriage set by said carriage scanning period setting means.

4. (Previously Presented) A printing apparatus scanning a printing head over a printing medium a plurality of times, to perform printing upon the print

medium during each respective scan and to feed the printing medium a predetermined amount in a direction different from a scanning direction of a carriage, said printhead being mounted on said carriage, said printing apparatus comprising:

means for getting information relating to a printing medium feeding period required for feeding the printing medium for the predetermined amount after completion of printing in a preceding line in a preceding scan;

means for getting information relating to a carriage scanning period from an end position of printing of the preceding line to a start position of printing of the next line in a scanning direction of the carriage; and

means for driving said carriage to scan to start printing of the next line, after completion of printing in the preceding line, depending upon a relationship between said carriage scanning period and said printing medium feeding period,

wherein said carriage driving means starts printing of said next line without stopping said carriage subsequent to the printing of said preceding line when said carriage scanning period is more than said printing medium feeding period and printing directions of the preceding line and the next line are of the same direction.

5. (Previously Presented) A printing apparatus as claimed in Claim 4,

wherein said carriage driving means does not vary a scanning speed of said carriage even after completion of printing of the preceding line when said carriage scanning period is longer than said printing medium feeding period.

6. (Original) A printing apparatus as claimed in Claim 4, wherein said carriage driving means provides a zone to stop the carriage for a predetermined period so that said carriage scanning period becomes equal to said printing medium feeding period

when said carriage scanning period is less than said printing medium feeding period, and accelerates said carriage to reach the printing start position at a predetermined speed after decelerating said carriage to stop for the predetermined period after completion of printing of the preceding line.

7. (Previously Presented) A printing apparatus as claimed in Claim 4, wherein said carriage driving means provides a zone to decelerate the carriage for a predetermined period so that said carriage scanning period becomes equal to said printing medium feeding period when said carriage scanning period is less than said printing medium feeding period, and accelerates said carriage to reach the printing start position at a predetermined speed after scanning said carriage at a decelerated speed after completion of printing of the preceding line.

8. (Currently Amended) A printing apparatus scanning a printing head over a printing medium a plurality of times, to perform printing upon the print medium during each respective scan and to feed the printing medium a predetermined amount in a direction different from a scanning direction of a carriage, said printhead being mounted on said carriage, said printing apparatus comprising:

means for getting information relating to a printing medium feeding period required for feeding the printing medium for the predetermined amount after completion of printing in a preceding line in a preceding scan;

means for setting a carriage scanning period required to start printing of the next line after completion of printing in the preceding line in said preceding scan so as to become ~~substantially~~ equal to said printing medium feeding period depending upon a printing completion position of the preceding line and the printing start position of the next

line; and

means for driving said carriage to scan depending upon a period set by said carriage scanning period setting means.

9. (Previously Presented) A printing apparatus as claimed in Claim 8,

wherein said carriage scanning period includes at least a first carriage scanning period required for stopping the carriage at a predetermined position after completion of printing of the preceding line, a carriage return period required for effecting a scanning in said predetermined direction and returning the carriage in reverse direction to stop at the predetermined position, and a second carriage scanning period required for the carriage to reach at the predetermined speed to the printing start position of the next line from a predetermined position stopping after carriage return,

said carriage scanning period setting means takes a difference between a sum of said first carriage scanning period and said carriage return period and said second carriage scanning period, and a printing medium feeding period as a waiting period when a sum of said first carriage scanning period and said carriage return period and said second carriage scanning period is less than said printing medium feeding period,

said carriage driving means maintains stopping the carriage for said waiting period after carriage return.

10. (Previously Presented) A printing apparatus scanning a printing head over a printing medium a plurality of times, to perform printing upon the print medium during each respective scan and to feed the printing medium a predetermined amount in a direction different from a scanning direction of a carriage, said printhead being mounted on said carriage, said printing apparatus comprising:

means for getting information relating to a printing medium feeding period required for feeding the printing medium for the predetermined amount after completion of printing in a preceding line in a preceding scan;

means for setting a carriage scanning period required to start printing of the next line after completion of printing in the preceding line in a preceding scan so as to become equal to said printing medium feeding period depending upon a printing completion position of the preceding line and the printing start position of the next line; and

means for driving said carriage to scan depending upon a period set by said carriage scanning period setting means.

11. (Previously Presented) A printing apparatus as claimed in Claim 10,

wherein said carriage scanning period includes at least a first carriage scanning period required for the carriage to stop at a predetermined position after completion of printing in a predetermined direction, a recovery process period required for performing recovery process of the printing head at the predetermined position and a second carriage scanning period required for the carriage to reach the printing start position of the next line by scanning the carriage in a direction opposite to scanning of said predetermined direction from said predetermined position after finishing of the recovery process,

said carriage scanning period setting means takes a difference between a sum of said first carriage scanning period, a recovery period and said second carriage scanning period, and said printing medium feeding period as a waiting period when a sum of said first carriage scanning period, said recovery period and said second carriage scanning period is less than said printing medium feeding period,

said carriage driving means stops the carriage for said waiting period after finishing said recovery process.

12. (Previously Presented) A printing apparatus as claimed in Claim 10,

wherein said carriage scanning period includes at least a first carriage scanning period required for the carriage to stop at a predetermined position after completion of printing in a predetermined direction, a recovery process period required for performing recovery process of the printing head at the predetermined position and a second carriage scanning period required for the carriage to reach the printing start position of the next line by scanning the carriage in a direction opposite to scanning of said predetermined direction from said predetermined position after finishing of the recovery process,

said carriage scanning period setting means takes said printing medium a difference between a sum of said first carriage scanning period, a recovery period and said second carriage scanning period, and said printing medium feeding period as a waiting period when a sum of said first carriage scanning period, said recovery period and said second carriage scanning period is less than said printing medium feeding period,

said carriage driving means for performing said recovery process after stopping the carriage for said waiting period.

13. (Currently Amended) A carriage scan driving method using a printing apparatus scanning a printing head over a printing medium a plurality of times, to perform printing upon the print medium during each respective scan and to feed the printing medium a predetermined amount in a direction different from a scanning direction of a carriage, the carriage being used to mount the print head, said printing apparatus

comprising:

a step of getting information relating to a printing medium feeding period required for feeding the printing medium for the predetermined amount after completion of printing in a preceding line in a preceding scan;

a step of setting a carriage scanning period required to start printing of the next line after completion of printing in the preceding line so as to become ~~substantially~~ equal to the printing medium feeding period depending upon a printing completion position of the preceding line and the printing start position of the next line; and

a step of driving the carriage to travel depending upon a period set in said carriage scanning period setting step.

14. (Previously Presented) A carriage scan driving method as claimed in Claim 13,

wherein the carriage scanning period includes at least a first carriage scanning period required for the carriage to reach a predetermined position after completion of printing of the preceding line and a second carriage scanning period required for the carriage to reach the predetermined period at the printing start position of the next line,

said carriage scanning period setting step includes taking a difference between the printing medium feeding period and a sum of the first carriage scanning period and the second carriage scanning period, as a waiting period when a sum of the first carriage scanning period and the second carriage scanning period is less than the printing medium feeding period, and

in said carriage driving step, the carriage is stopped for the waiting

period after deceleration and stopping of the carriage according to the first carriage scanning period after completion of printing of the preceding line.

15. (Previously Presented) A carriage scan driving method as claimed in Claim 13, wherein the carriage scanning period includes at least a first carriage scanning period required for the carriage to reach a predetermined position after completion of printing of the preceding line and a second carriage scanning period required for the carriage to reach the predetermined period at the printing start position of the next line,

said carriage scanning period setting step includes setting a scanning speed of the carriage so that a sum of the first carriage scanning period and the second carriage scanning period becomes equal to the printing medium feeding period, and

said carriage driving step includes controlling carriage scanning depending upon a scanning speed of the carriage set in said carriage scanning period setting step.

16. (Previously Presented) A carriage scan driving method using a printing apparatus scanning a printing head over a printing medium a plurality of times, to perform printing upon the print medium during each respective scan and to feed the printing medium a predetermined amount in a direction different from a scanning direction of a carriage, the carriage being used to mount the print head, said method comprising:

a step of getting information relating to a printing medium feeding period required for feeding the printing medium for the predetermined amount after completion of printing in a preceding line in a preceding scan;

a step of getting information relating to a scanning period of the carriage from completion position of printing of the preceding line to start position of

printing of next line in a scanning direction of the carriage; and

a step of driving the carriage to scan to start printing of the next line after completion of printing in the preceding line depending upon a relationship between the carriage scanning period and the printing medium feeding period,

wherein, in said step of driving said carriage printing of the next line is begun without stopping the carriage subsequent to the printing of the preceding line when the carriage scanning period is more than the printing medium feeding period and printing directions of the preceding line and the next line are of the same direction.

17. (Previously Presented) A carriage scan driving method as claimed in Claim 16, wherein, in said carriage driving step, a scanning speed of the carriage is not varied even after completion of printing of the preceding line when the carriage scanning period is longer than the printing medium feeding period.

18. (Previously Presented) A carriage scan driving method as claimed in Claim 16, wherein said carriage driving step includes providing a zone to stop the carriage for a predetermined period so that the carriage scanning period becomes equal to the printing medium feeding period when the carriage scanning period is less than the printing medium feeding period, and includes accelerating the carriage to reach the printing start position at a predetermined speed after decelerating the carriage to stop for the predetermined period after completion of printing of the preceding line.

19. (Previously Presented) A carriage scan driving method as claimed in Claim 16, wherein said carriage driving step includes providing a zone to decelerate the carriage for a predetermined period so that the carriage scanning period becomes equal to

the printing medium feeding period when the carriage scanning period is less than the printing medium feeding period, and accelerating the carriage to reach the printing start position at a predetermined speed after scanning the carriage at decelerated speed after completion of printing of the preceding line.

20. (Currently Amended) A carriage scan driving method using a printing apparatus scanning a printing head over a printing medium a plurality of times, to perform printing upon the print medium during each respective scan and to feed the printing medium a predetermined amount in a direction different from a scanning direction of a carriage, the carriage being used to mount the print head, said method comprising:

a step of getting information relating to a printing medium feeding period required for feeding the printing medium for the predetermined amount after completion of printing in a preceding line in a preceding scan;

a step of setting a carriage scanning period required to start printing of the next line after completion of printing in the preceding line in the preceding scan so as to become ~~substantially~~ equal to the printing medium feeding period depending upon a printing completion position of the preceding line and the printing start position of the next line; and

a step of driving the carriage to scan depending upon a period set in said carriage scanning period setting step.

21. (Previously Presented) A carriage scan driving method as claimed in Claim 20, wherein the carriage scanning period includes at least a first carriage scanning period required for stopping the carriage at a predetermined position after completion of printing of the preceding line, a carriage return period required for effecting scanning in the

predetermined direction and returning the carriage in reverse direction to stop at the predetermined position, and a second carriage scanning period required for the carriage to reach at the predetermined speed to the printing start position of the next line from a predetermined position stopping after carriage return,

said carriage scanning period setting step includes taking a difference between a sum of the first carriage scanning period and the carriage return period and the second carriage scanning period, and a printing medium feeding period as a waiting period when a sum of the first carriage scanning period and the carriage return period and the second carriage scanning period is less than the printing medium feeding period, and

in said carriage driving step, the carriage is stopped for the waiting period after carriage return.

22. (Previously Presented) A carriage scan driving method using a printing apparatus scanning a printing head over a printing medium a plurality of times, to perform printing upon the print medium during each respective scan and to feed the printing medium a predetermined amount in a direction different from a scanning direction of a carriage the carriage being used to mount the print head, wherein a recovery process of the printing head at a predetermined position is performed per scan in a predetermined direction of said carriage, said method comprising:

a step of getting information relating to a printing medium feeding period required for feeding the printing medium for the predetermined amount after completion of printing in a preceding line in a preceding scan;

a step of setting a carriage scanning period required to start printing of the next line after completion of printing in the preceding line in a preceding scan so as

to become equal to the printing medium feeding period depending upon a printing completion position of the preceding line and the printing start position of the next line; and

a step of driving the carriage to scan depending upon a period set in said carriage scanning period setting step.

23. (Previously Presented) A carriage scan driving method as claimed in Claim 22, wherein the carriage scanning period includes at least a first carriage scanning period required for the carriage to stop at a predetermined position after completion of printing in a predetermined direction, a recovery process period required for performing recovery process of the printing head at the predetermined position and a second carriage scanning period required for the carriage to reach the printing start position of the next line by scanning the carriage in a direction opposite to scanning of the predetermined direction from said predetermined position after finishing of the recovery process,

said carriage scanning period setting step includes taking the printing medium a difference between a sum of the first carriage scanning period, a recovery period and the second carriage scanning period, and the printing medium feeding period as a waiting period when a sum of the first carriage scanning period, the recovery period and the second carriage scanning period is less than the printing medium feeding period, and

in said carriage driving step, carriage is stopped for the waiting period after the recovery process.

24. (Previously Presented) A carriage scan driving method as claimed in Claim 22, wherein the carriage scanning period includes at least a first carriage scanning

period required for the carriage to stop at a predetermined position after completion of printing in a predetermined direction, a recovery process period required for performing recovery process of the printing head at the predetermined position and a second carriage scanning period required for the carriage to reach the printing start position of the next line by scanning the carriage in a direction opposite to a scanning of the predetermined direction from the predetermined position after finishing of the recovery process,

said carriage scanning period setting step includes taking a difference between a sum of the first carriage scanning period, a recovery period and the second carriage scanning period, and the printing medium feeding period as a waiting period when a sum of the first carriage scanning period, the recovery period and the second carriage scanning period is less than the printing medium feeding period,

said carriage driving step includes performing the recovery process after stopping the carriage for the waiting period.

25. (Currently Amended) A printing method performing printing on a printing medium with a primary scan of a printing head over a printing medium a plurality of times, and with an auxiliary scan of the printing medium and the carriage in a direction different from the direction of the primary scan, the method comprising:

a printing step, of performing printing in a leading primary scan;

a step of performing the auxiliary scan after completion of said printing step and before initiation of printing in a succeeding primary scan;

wherein a period required for the primary scan from a printing completion position of a printing step in a said leading primary scan to a printing start position of a printing step in a next primary scan is to become ~~substantially~~ equal to a period required for the auxiliary scan.